REMARKS/ARGUMENTS

The above identified patent application has been amended and reconsideration and reexamination are hereby requested.

Claims 41-79, 81, and 82 are now pending in the application. Claims 1-40 have been previously canceled. Claim 80 has been canceled. Claims 78 and 81 have been amended. The Examiner has allowed claims 41-77.

The Applicant has amended the Specification. No new matter has been added.

Claims Rejections - 35 U.S.C. § 103

The Examiner has rejected claims 78-82 under 35 U.S.C. § 103(a) as being unpatentable over Knutson et al. (US 6,788,710) in view of Citta et al. (US 5,602,595) and Limberg (US 6,201,564). Rejections to claim 80 is moot, as this claim has been canceled.

Amended independent claim 78 recites "... periodically inserting predefined sequences into the robust data" and "pre-processing original robust data before multiplexing with the normal data." The Applicant submits that the above recitations as claimed in claim 78 are neither taught nor suggested nor are an obvious result from a reasonable combination of the teachings in the references Knutson et al., Citta et al., and Limberg, alone or in combination.

Knutson et al., while providing for padding with null data (col. 6, lines 35-45), does not disclose the above recitation. In Knutson et al., no null packets will be generated if the auxiliary data is longer than one packet and the remaining bits will be padded with null data if the auxiliary data is shorter than one packet (col. 6, lines 35-45). Knutson et al. fails to teach "periodically inserting predefined sequences into the robust data." The Applicant points the Examiner to FIG. 5 of the present patent application. As shown in FIG. 5, the predefined sequences are periodically inserted regardless of the length of the robust data.

In addition, Knutson et al. fails to teach "pre-processing original robust data before multiplexing with the normal data." One feature of the claimed invention is to pre-process the robust data before multiplexing with the normal data in order to ensure

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additional error correction and to enhance ghost cancellation performance. In the present patent application, the pre-processing includes coding the original robust data for first forward error correction and periodically inserting predefined sequences into the forward error correction coded robust data. As shown in FIG. 2 of the present patent application, the processing is performed before the robust data is multiplexed with normal data (MPEG video/audio). However, Knutson et al. fails to teach the forward error correction coding and periodic insertion of predefined sequences before multiplexing with normal data (see FIG. 4, FIG. 8). Knutson et al. merely teaches simple padding with null data based on the length of auxiliary data before multiplexing with the recorded data packets.

As such, Knutson et al. does not teach "periodically inserting predefined sequences into the robust data" nor "pre-processing original robust data before multiplexing with the normal data." Citta et al. and Limberg also do not teach the above recitations.

Furthermore, Limberg, while providing for the use of ghost cancellation performance of the channel data for channel equalization (FIG. 2, S3; FIG. 5, S32-S34), does not teach "using the predefined sequences in order to enhance ghost cancellation performance." FIG. 5 of Limberg is a flow chart of the known routine used in the step S3 of equalizing channel response in the method shown in FIG. 2 or FIG. 4. In step S31, a training signal is extracted from a data-field-synchronization (DFS) signal generated by complex demodulation step S1 shown in FIG. 2 or FIG. 4. In step S32, the training signal is accumulated to generate a ghost-cancellation reference (GCR) signal. In step S33, a discrete Fourier transform (DFT) of the GCR signal is calculated. Then the transmission channel is characterized by the DFT in step S34, and the channel equalization filtering coefficients are calculated for complementing the terms of the DFT characterizing the transmission channel in step S35. According to FIG. 5 of Limberg, a ghost-cancellation reference (GCR) signal is used for channel equalization. However, Limberg does not teach using "predefined sequences" which are inserted periodically during DTV data transmission for channel equalization as shown in FIG. 5 of the present patent application. The Applicant submits that the use of predefined sequences inserted

periodically for channel equalization is patentably distinct from the use of ghost cancellation performance of the channel data for channel equalization.

As such, Limberg does not teach "performing channel equalization on the robust data in the DTV signal using the predefined sequences in order to enhance ghost cancellation performance of the robust data." Knutson et al. and Citta et al. also do not teach the above recitation.

Accordingly, because the cited references do not teach or suggest all of the claim limitations, the Applicant submits that the *prima facie* case of obviousness is not established, and therefore claim 78 is unobvious and patentable over the cited references. Claims 79, 81, and 82 are dependent on independent claim 78 and therefore include all of the limitations of claim 78 and additional limitations therein. As such, these claims are also allowable based upon claim 78 and the additional limitations therein.
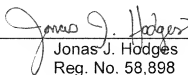
Therefore, in view of the above amendment and remarks, the Applicant respectfully submits that the claims are patentably distinct over the prior art and that all the rejections to the claims have been overcome. As such, allowance of the above Application is requested. If there are any remaining issues that can be addressed over the telephone, the Examiner is cordially invited to call the Applicant's attorney at the number listed below.

Respectfully submitted,

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